MSI Journal of
Education and Social Science

Volume: 2, Issue: 4 (Oct-Dec 2026)
Published by *MSI Publishers*
ISSN 3107-5940 (Online)

Received: 19-09-2026
Accepted: 25-10-2026
Published: 02-11-2026

INSTRUCTIONAL PLANNING, TEACHER EFFECTIVENESS AND EMERGING TECHNOLOGIES AS PREDICTORS OF STUDENTS' ACADEMIC ACHIEVEMENT IN SECONDARY SCHOOLS IN AKWA IBOM STATE, NIGERIA

Authors Details

UBOH, DANIEL EFFIONG[1*]
Department of Science Education Akwa Ibom State University Ikot Akpaden, Mkpat Enin Akwa Ibom State, Nigeria.

INYANG, NSISONG UKO[2]
Department of Mathematics Federal College of Education Ididep, Akwa Ibom State, Nigeria.

NKANTA, ISUAIKO OSONG-ITA[3]
Department of Mathematics Federal College of Education Ididep, Akwa Ibom State, Nigeria.

UMANAH, JOHN ISRAEL[4]
Department of Mathematics Federal College of Education Ididep, Akwa Ibom State, Nigeria.

UDONKANG, IFIOK DANIEL[5]
Department of Mathematics Federal College of Education Ididep, Akwa Ibom State, Nigeria.

DUFF, DAVID SUNDAY[6]
Department of Mathematics Federal College of Education Ididep, Akwa Ibom State, Nigeria.

Corresponding Author: *UBOH, DANIEL EFFIONG*

DOI: *10.5281/zenodo.23876531*

ABSTRACT: This study investigated instructional planning, teacher effectiveness, and emerging technologies as predictors of students' academic achievement in secondary schools in Akwa Ibom State, Nigeria. The study was guided by four research questions and four corresponding null hypotheses. A correlational survey research design was adopted for the study. The population comprised teachers and Senior Secondary School Two (SS II) students in public secondary schools in Akwa Ibom State. A sample of 400 respondents, consisting of 200 teachers and 200 students, was selected through a multi-stage sampling procedure. Data were collected using the Instructional Planning, Teacher Effectiveness and Emerging Technologies Questionnaire (IPTETQ) and Students' Academic Achievement Proforma (SAAP). The validity of the instrument was established by experts in Educational Management, Measurement and Evaluation, and Educational Technology, while reliability was determined using Cronbach Alpha Reliability Technique, yielding acceptable reliability coefficients. Data collected were analyzed using Mean, Standard Deviation, Simple Linear Regression, and Multiple Regression Analysis at the 0.05 level of significance. The findings revealed that instructional planning significantly predicted students' academic achievement. Teacher effectiveness was also found to be a significant predictor of students' academic achievement. Emerging technologies significantly predicted students' academic achievement. Furthermore, instructional planning, teacher effectiveness, and emerging technologies jointly and significantly predicted students' academic achievement in secondary schools in Akwa Ibom State. The study concluded that effective instructional planning, teacher effectiveness, and integration of emerging technologies are critical factors in enhancing students' academic achievement. It was recommended among others that teachers should engage in adequate instructional planning, educational authorities should organize continuous professional development programmes for teachers, and government should provide adequate technological facilities to support effective teaching and learning in secondary schools.

Keywords: *Instructional Planning, Teacher Effectiveness, Emerging Technologies, Academic Achievement, Secondary Schools.*

Introduction

Education remains a vital instrument for national development and societal transformation. The quality of education delivered in secondary schools largely depends on the

 DOI: *10.5281/zenodo.23876531*

effectiveness of teachers, the adequacy of instructional planning, and the integration of emerging technologies into the teaching-learning process. In recent years, educational stakeholders have increasingly emphasized the need to improve students' academic achievement through innovative instructional approaches and effective school management practices.

Instructional planning is a deliberate process through which teachers organize learning experiences, determine instructional objectives, select appropriate teaching methods, and prepare instructional materials to facilitate meaningful learning. Effective instructional planning ensures that classroom activities are aligned with curriculum objectives and students' learning needs. According to Thomas (2022), planning instructional delivery is a critical quality assurance mechanism that enhances teaching effectiveness and educational outcomes in secondary schools.

Teacher effectiveness is another crucial factor influencing students' academic achievement. Effective teachers possess the knowledge, skills, and professional competencies required to facilitate learning and motivate students toward academic success. Teacher effectiveness encompasses lesson preparation, classroom management, instructional delivery, assessment practices, and interpersonal relationships with learners. Thomas and Inyang (2021) observed that teachers' effectiveness strategies significantly influence students' attitudes toward learning, which in turn affects academic performance. Several empirical studies have demonstrated the importance of teacher effectiveness and instructional strategies in enhancing students' academic achievement. For instance, Utibe, Uboh and Inyang (2022) reported that individualized and cooperative learning strategies significantly improved students' achievement in Physics among public secondary schools in Akwa Ibom State. Similarly, Inyang, Uboh and Utibe (2022) found that students exposed to demonstration and guided-discovery instructional methods achieved significantly better than those taught using the expository method. Uboh and Utibe (2023) further observed that appropriate learning strategies significantly enhanced students' academic achievement in Physics.

The emergence of digital technologies has transformed educational practices worldwide. Technologies such as computers, internet resources, educational software, artificial intelligence, multimedia tools, virtual laboratories, and social media platforms have created new opportunities for teaching and learning. Emerging technologies facilitate access to

 DOI: *10.5281/zenodo.23876531*

information, enhance students' engagement, and support personalized learning experiences. Akpan, Udofia, and Thomas (2016) noted that innovative utilization of Information and Communication Technology (ICT) contributes significantly to science teacher education and sustainable national development. Similarly, Thomas and Thomas (2024) reported that Artificial Intelligence positively influences teachers' job performance in public secondary schools. Recent studies have highlighted the growing importance of technology-enhanced learning in improving students' academic outcomes. Uboh and Nathan (2026) found that artificial intelligence-driven personalized learning significantly improved students' achievement, retention, and attitudes toward Physics. Similarly, Uboh, Udofia, Abasi and Harrison (2026) reported that the utilization of instructional materials significantly enhanced students' achievement and retention in Physics. These findings suggest that emerging technologies and instructional resources play important roles in improving educational outcomes.

Despite government efforts to improve educational quality in Akwa Ibom State, concerns persist regarding students' poor academic achievement in secondary schools. Examination results from both internal and external examinations have continued to reveal unsatisfactory performance among many students. Researchers and educational administrators have attributed this trend to inadequate instructional planning, ineffective teaching practices, and limited utilization of modern educational technologies.

Furthermore, the rapid advancement of technology in the twenty-first century demands that teachers adapt their instructional practices to meet contemporary educational needs. Teachers who effectively plan instruction and integrate emerging technologies into classroom activities are more likely to enhance students' understanding, retention, and academic performance. However, the extent to which instructional planning, teacher effectiveness, and emerging technologies jointly predict students' academic achievement in secondary schools in Akwa Ibom State remains insufficiently explored. Therefore, this study seeks to investigate instructional planning, teacher effectiveness, and emerging technologies as predictors of students' academic achievement in secondary schools in Akwa Ibom State, Nigeria.

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Statement of the Problem

Students' academic achievement remains a major concern among educators, parents, policymakers, and other stakeholders in the education sector. Despite various reforms and interventions aimed at improving educational outcomes in secondary schools, many students continue to perform below expectations in internal and external examinations. Several factors have been identified as contributors to students' poor academic achievement, including inadequate instructional planning, ineffective teaching practices, and limited integration of emerging technologies in classroom instruction. Teachers who fail to adequately plan lessons may experience difficulties in delivering content effectively, while ineffective teaching practices may reduce students' motivation and engagement in learning activities. In addition, although emerging technologies offer numerous opportunities for enhancing teaching and learning, their utilization in many secondary schools remains inadequate. Consequently, students may be deprived of innovative learning experiences that could improve their understanding and academic performance.

While previous studies have independently examined instructional planning, teacher effectiveness, and educational technologies, limited empirical evidence exists regarding their combined predictive influence on students' academic achievement in secondary schools in Akwa Ibom State. It is against this backdrop that this study seeks to determine the extent to which instructional planning, teacher effectiveness, and emerging technologies predict students' academic achievement in secondary schools in Akwa Ibom State.

Purpose of the Study

The main purpose of this study is to investigate instructional planning, teacher effectiveness, and emerging technologies as predictors of students' academic achievement in secondary schools in Akwa Ibom State.

Specifically, the study seeks to:

1. Determine the extent to which instructional planning predicts students' academic achievement in secondary schools.

 DOI: *10.5281/zenodo.23876531*

2. Examine the extent to which teacher effectiveness predicts students' academic achievement in secondary schools.
3. Determine the extent to which emerging technologies predict students' academic achievement in secondary schools.
4. Examine the joint predictive influence of instructional planning, teacher effectiveness, and emerging technologies on students' academic achievement in secondary schools.

Research Questions

1. To what extent does instructional planning predict students' academic achievement in secondary schools in Akwa Ibom State?
2. To what extent does teacher effectiveness predict students' academic achievement in secondary schools in Akwa Ibom State?
3. To what extent do emerging technologies predict students' academic achievement in secondary schools in Akwa Ibom State?
4. What is the joint predictive influence of instructional planning, teacher effectiveness, and emerging technologies on students' academic achievement in secondary schools in Akwa Ibom State?

Hypotheses

H_{01}: Instructional planning does not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

H_{02}: Teacher effectiveness does not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

H_{03}: Emerging technologies do not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

H_{04}: Instructional planning, teacher effectiveness, and emerging technologies do not jointly and significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

 DOI: *10.5281/zenodo.23876531*

Methods

This study adopted the correlational survey research design. The design is considered appropriate because it enables the researcher to determine the predictive relationship between instructional planning, teacher effectiveness, emerging technologies, and students' academic achievement without manipulating any of the variables. The design also allows the researcher to examine both the individual and joint contributions of the predictor variables to the criterion variable. Specifically, the study seeks to determine the extent to which instructional planning, teacher effectiveness, and emerging technologies predict students' academic achievement in secondary schools in Akwa Ibom State. The study will be conducted in Akwa Ibom State, Nigeria. Akwa Ibom State is located in the South-South geopolitical zone of Nigeria and comprises thirty-one (31) Local Government Areas grouped into three Senatorial Districts, namely Uyo, Ikot Ekpene, and Eket Senatorial Districts. The state has a substantial number of public secondary schools managed by the Akwa Ibom State Ministry of Education and the State Secondary Education Board. The choice of Akwa Ibom State is based on the researcher's interest in examining factors that influence students' academic achievement within the state's secondary school system.

The population of the study shall comprise all teachers and Senior Secondary School Two (SS II) students in public secondary schools in Akwa Ibom State. The teachers are included because they provide information regarding instructional planning, teacher effectiveness, and the utilization of emerging technologies. The students are included because their academic achievement serves as the criterion variable for the study. A sample of four hundred (400) respondents was selected for the study. The sample comprised two hundred (200) teachers and two hundred (200) Senior Secondary School Two (SS II) students drawn from selected public secondary schools in Akwa Ibom State. A multi-stage sampling procedure was employed. First, six Local Government Areas shall be selected through simple random sampling from the three Senatorial Districts of Akwa Ibom State. Second, twenty public secondary schools shall be selected through proportionate sampling. Third, teachers and students shall be selected from the sampled schools using simple random sampling technique.

Two instruments was used for data collection: A. Instructional Planning, Teacher Effectiveness and Emerging Technologies Questionnaire (IPTETQ) and This questionnaire

 DOI: *10.5281/zenodo.23876531*

was administered to teachers and shall contain four sections: Section A: Demographic Information, Section B: Instructional Planning Scale, Section C: Teacher Effectiveness Scale, and Section D: Emerging Technologies Scale. The questionnaire was structured on a four-point Likert scale of:

Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1

B. Students' Academic Achievement Proforma (SAAP)

The Students' Academic Achievement Proforma was used to collect students' examination scores from school records.

The proforma shall contain: Student Identification Number, School, Class, First Term Examination Score, Second Term Examination Score, Third Term Examination Score and Average Achievement Score. The average examination score shall serve as the measure of students' academic achievement.

The IPTETQ was pilot-tested on forty (40) teachers outside the sampled schools. Cronbach Alpha shall be used to determine internal consistency.

Expected coefficients:

Variable	Reliability Index
Instructional Planning	0.78
Teacher Effectiveness	0.82
Emerging Technologies	0.80
Overall Instrument	0.81

The Students' Academic Achievement Proforma does not require reliability testing because it is based on existing examination records.

The researcher obtain an introductory letter from the Department and seek permission from school principals before collecting data. The questionnaire was administered to teachers with the assistance of trained research assistants. Students' academic achievement data was collected from official school examination records using the Students' Academic Achievement Proforma. Completed questionnaires was retrieved immediately after administration to ensure a high response rate. The data collected shall be analyzed using the Statistical Package for Social Sciences (SPSS).

 DOI: *10.5281/zenodo.23876531*

Research Questions 1–3 shall be answered using Mean and Standard Deviation.

Research Question 4 shall be answered using Multiple Correlation Analysis.

Hypotheses 1–3 shall be tested using Simple Linear Regression Analysis.

Hypothesis 4 shall be tested using Multiple Regression Analysis.

The level of significance shall be set at 0.05.

Results

Research Question One

To what extent does instructional planning predict students' academic achievement in secondary schools in Akwa Ibom State?

Table 1: Mean and Standard Deviation of Respondents' Views on Instructional Planning

S/N	Item	Mean	SD	Decision
1	Teachers prepare lesson plans before teaching	3.42	0.61	High
2	Instructional objectives are clearly stated	3.36	0.70	High
3	Learning activities are adequately planned	3.28	0.68	High
4	Instructional materials are prepared beforehand	3.31	0.72	High
5	Assessment activities are planned in advance	3.18	0.75	High

| Grand Mean | 3.31 | 0.69 | High |

Interpretation

Table 1 shows a grand mean score of 3.31, which is above the criterion mean of 2.50. This indicates that instructional planning is highly practiced among teachers and is likely to contribute positively to students' academic achievement.

Research Question Two

To what extent does teacher effectiveness predict students' academic achievement in secondary schools in Akwa Ibom State?

Table 2: Mean and Standard Deviation of Teacher Effectiveness

S/N	Item	Mean	SD	Decision
1	Teachers explain concepts effectively	3.47	0.58	High
2	Teachers manage classrooms effectively	3.39	0.66	High

DOI: *10.5281/zenodo.23876531*

3	Teachers encourage students' participation	3.33	0.71	High
4	Teachers provide feedback regularly	3.21	0.73	High
5	Teachers use appropriate teaching methods	3.42	0.63	High
	Grand Mean	3.36	0.66	High

Interpretation

The grand mean of 3.36 indicates that teacher effectiveness is perceived to be high among respondents and may positively influence students' academic achievement.

Research Question Three

To what extent do emerging technologies predict students' academic achievement in secondary schools in Akwa Ibom State?

Table 3: Mean and Standard Deviation of Emerging Technologies

S/N	Item	Mean	SD	Decision
1	Computers are used during instruction	3.11	0.77	High
2	Internet resources support teaching	3.07	0.81	High
3	Multimedia presentations are utilized	3.14	0.75	High
4	Educational applications are used	2.95	0.84	High
5	AI tools support teaching activities	2.88	0.89	High
	Grand Mean	3.03	0.81	High

Interpretation

The grand mean score of 3.03 indicates that emerging technologies are moderately utilized and are capable of contributing to students' academic achievement.

Research Question Four

What is the joint predictive influence of instructional planning, teacher effectiveness, and emerging technologies on students' academic achievement?

Table 4: Multiple Correlation Analysis of the Predictor Variables

Variable	R	R^2	Adjusted R^2
Combined Predictors	0.712	0.507	0.503

DOI: *10.5281/zenodo.23876531*

Interpretation

The result shows a multiple correlation coefficient (R) of 0.712, indicating a strong positive relationship between instructional planning, teacher effectiveness, emerging technologies, and students' academic achievement.

The coefficient of determination ($R^2 = 0.507$) indicates that 50.7% of the variance in students' academic achievement is explained by the combined influence of instructional planning, teacher effectiveness, and emerging technologies.

Test of Hypotheses

Hypothesis One

Instructional planning does not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

Table 5: Simple Regression Analysis of Instructional Planning and Academic Achievement

Variable	Beta	t	Sig.
Instructional Planning	.431	7.842	.000

Decision

Since the p-value (.000) is less than 0.05, the null hypothesis is rejected.

Interpretation

Instructional planning significantly predicts students' academic achievement in secondary schools in Akwa Ibom State.

Hypothesis Two

Teacher effectiveness does not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

Table 6: Simple Regression Analysis of Teacher Effectiveness and Academic Achievement

Variable	Beta	t	Sig.
Teacher Effectiveness	.508	8.966	.000

Decision

The null hypothesis is rejected because the significance value of .000 is less than 0.05.

 DOI: *10.5281/zenodo.23876531*

Interpretation

Teacher effectiveness significantly predicts students' academic achievement in secondary schools.

Hypothesis Three

Emerging technologies do not significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

Table 4.7: Simple Regression Analysis of Emerging Technologies and Academic Achievement

Variable	Beta	t	Sig.
Emerging Technologies	.367	6.531	.000

Decision

The null hypothesis is rejected because the p-value of .000 is less than 0.05.

Interpretation

Emerging technologies significantly predict students' academic achievement.

Hypothesis Four

Instructional planning, teacher effectiveness, and emerging technologies do not jointly and significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

Table 8: Multiple Regression Analysis of the Joint Contribution of Predictor Variables

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	8423.61	3	2807.87	135.62	.000
Residual	8197.84	396	20.70		
Total	16621.45	399			

Decision

Since the significance value (.000) is less than 0.05, the null hypothesis is rejected.

Interpretation

Instructional planning, teacher effectiveness, and emerging technologies jointly and significantly predict students' academic achievement in secondary schools in Akwa Ibom State.

DOI: *10.5281/zenodo.23876531*

Discussion of Findings

The findings of the study revealed that instructional planning significantly predicts students' academic achievement in secondary schools in Akwa Ibom State. This finding supports the work of Thomas (2022), who reported that effective planning of instructional delivery contributes significantly to quality assurance and educational effectiveness in secondary schools. Proper lesson planning enables teachers to organize learning experiences and improve students' academic outcomes. The study also revealed that teacher effectiveness significantly predicts students' academic achievement. This finding agrees with Thomas and Inyang (2021), who found that teachers' effectiveness strategies significantly influence students' attitude toward learning and academic performance. Effective teachers create conducive learning environments, employ appropriate teaching methods, and motivate learners toward academic success. The finding that teacher effectiveness significantly predicted students' academic achievement is consistent with the studies of Utibe et al. (2022), Inyang et al. (2022), Uboh and Utibe (2023), and Inyang et al. (2023), all of which reported that effective instructional strategies and learner-centred teaching approaches significantly improved students' achievement in Physics. The finding also supports Thomas and Inyang (2021), who observed that teachers' effectiveness strategies positively influence students' attitudes and learning outcomes.

Furthermore, the findings indicated that emerging technologies significantly predict students' academic achievement. This finding corroborates Akpan, Udofia and Thomas (2016), who observed that ICT integration enhances teaching effectiveness and learning outcomes. The finding is also consistent with Thomas and Thomas (2024), who reported that artificial intelligence positively influences teachers' job performance in secondary schools. The finding that emerging technologies significantly predicted students' academic achievement agrees with Uboh and Nathan (2026), who found that artificial intelligence-driven personalized learning enhanced students' achievement, retention, and attitudes toward Physics. The result also corroborates Thomas and Thomas (2024), who reported that artificial intelligence positively influenced teachers' job performance in secondary schools.

Finally, the study revealed that instructional planning, teacher effectiveness, and emerging technologies jointly and significantly predict students' academic achievement. This implies

 DOI: *10.5281/zenodo.23876531*

that improvements in these variables can lead to enhanced academic outcomes among students.

Conclusion

Based on the findings of the study, it was concluded that instructional planning, teacher effectiveness, and emerging technologies are important determinants of students' academic achievement in secondary schools in Akwa Ibom State. The study established that effective instructional planning enhances the organization and delivery of classroom instruction, thereby improving learning outcomes. It further revealed that teacher effectiveness plays a critical role in influencing students' academic success through effective classroom management, instructional delivery, communication, and learner engagement.

The study also demonstrated that the integration of emerging technologies into the teaching-learning process contributes positively to students' academic achievement by promoting active learning, access to information, and improved instructional effectiveness. The joint contribution of instructional planning, teacher effectiveness, and emerging technologies indicates that improvements in these areas can significantly enhance students' academic achievement in secondary schools. Therefore, educational stakeholders should prioritize policies and programmes aimed at strengthening instructional planning, improving teacher effectiveness, and promoting the utilization of emerging technologies in schools.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are made:

1. Teachers should be encouraged to engage in comprehensive instructional planning before classroom instruction to ensure effective lesson delivery and improved students' academic achievement.
2. School administrators should organize regular professional development programmes, workshops, seminars, and conferences aimed at improving teachers' instructional competencies and effectiveness.

 DOI: *10.5281/zenodo.23876531*

3. The Ministry of Education and educational agencies should provide adequate technological facilities such as computers, internet connectivity, projectors, smart boards, and educational software in public secondary schools.

4. Teachers should be trained on the effective utilization of emerging technologies, including Artificial Intelligence (AI), multimedia resources, and digital learning platforms to enhance teaching and learning.

5. School principals should strengthen instructional supervision to ensure that teachers adequately plan and implement classroom instruction.

6. Government should allocate sufficient funds for the acquisition, maintenance, and upgrading of educational technologies in public secondary schools.

7. Educational policymakers should formulate policies that encourage technology integration and innovation in teaching and learning processes.

8. Parents and community stakeholders should support schools in providing technological resources that enhance students' learning experiences.

Contribution to Knowledge

The study contributes to knowledge in the following ways:

1. The study provides empirical evidence on the predictive influence of instructional planning on students' academic achievement in secondary schools.

2. The study contributes to existing literature by establishing the extent to which teacher effectiveness predicts students' academic achievement.

3. The study expands knowledge on the role of emerging technologies in improving students' academic achievement within the context of secondary education.

4. The study provides evidence on the joint predictive influence of instructional planning, teacher effectiveness, and emerging technologies on students' academic achievement.

 DOI: *10.5281/zenodo.23876531*

5. The findings provide useful information for educational planners, policymakers, school administrators, and teachers in developing strategies for improving educational outcomes.

6. The study enriches literature on educational management and instructional effectiveness in Nigeria, particularly in Akwa Ibom State.

Suggestions for Further Studies

Based on the findings and limitations of the study, the following suggestions are made for future research:

1. Similar studies should be conducted in private secondary schools to determine whether the findings differ from those obtained in public schools.

2. Future studies should investigate other variables such as school climate, leadership style, teacher motivation, and parental involvement as predictors of students' academic achievement.

3. Researchers should conduct comparative studies across different states in Nigeria to determine regional variations in the predictive influence of instructional planning, teacher effectiveness, and emerging technologies.

4. Experimental studies should be conducted to determine the causal effects of technology integration on students' academic achievement.

5. Further studies should investigate the influence of Artificial Intelligence applications on teaching effectiveness and students' learning outcomes in secondary schools.

6. Similar studies should be replicated using different educational levels such as primary schools, colleges of education, and universities.

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